UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NATIONAL MARINE FISHERIES SERVICE
Northwest Region
7600 Sand Point Way N.E., Bldg. 1
BIN C15700
Seattle, WA 98115-0070

Refer to:
OSB2001-0038-FEC

July 12, 2001

Rogue River and Siskiyou National Forests
Attn: Jack Williams, Supervisor
333 West 8th Street
Medford, OR 97501-0209

Medford BLM District
Attn: Ron Wenker, District Manager
3040 Biddle Road
Medford, Oregon 97504

Re: Endangered Species Act Section 7 Formal Consultation and Magnuson-Stevens Act Essential Fish Habitat Consultation for Five Dam Removal Projects, Jackson County, Oregon

Dear Mr. Williams and Mr. Wenker:

Enclosed is a biological opinion (Opinion) prepared by the National Marine Fisheries Service (NMFS) pursuant to section 7 of the Endangered Species Act that addresses the proposed Wimer Dam, Maple Gulch Dam, Farmers Ditch Dam, Beaver Creek Dam, and Buck and Jones Dam removal projects in Jackson County, Oregon. The NMFS concludes in this Opinion that the proposed actions are not likely to jeopardize the Southern Oregon/Northern California Coasts (SONC) coho (*Oncorhynchus kisutch*), or destroy or adversely modify critical habitat. This document also serves as consultation on Essential Fish Habitat under Public Law 104-267, the Sustainable Fisheries Act of 1996, as it amended the Magnuson-Stevens Fishery Conservation and Management Act.

SONC coho salmon were listed as threatened under the ESA on May 6, 1997 (62 FR 24588), with critical habitat designated on May 5, 1999 (64 FR 24049). Interim protective regulations for SONC coho were issued under section 4(d) of the ESA on July 18, 1997 (62 FR 38479).

Pursuant to Section 7 of the ESA, NMFS has included reasonable and prudent measures with non-discretionary terms and conditions that NMFS believes are necessary and appropriate to minimize the potential for take associated with these projects. NMFS also concludes these actions would adversely affect EFH for coho and chinook salmon, and appropriate conservation recommendations are provided.

Questions regarding this letter or attached Opinion should be directed to Frank Bird of my staff in the Oregon Habitat Branch at 541.957.3383.

Sincerely,

for Michael R Crouse

Donna Darm
Acting Regional Administrator

Endangered Species Act - Section 7 Consultation & Magnuson-Stevens Act Essential Fish Habitat Consultation

BIOLOGICAL OPINION

Formal Section 7 Consultation on Wimer Dam, Maple Gulch Dam, Farmer's Ditch Dam, Beaver Creek Dam, and Buck and Jones Dam Removal Projects in the Rogue Basin, Jackson County, Oregon

Agency: Forest Service/Bureau of Land Management

Consultation Conducted By: National Marine Fisheries Service, Northwest Region

Date Issued: July 12, 2001

Refer to: OSB2001-0038-FEC

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1. ENDANGERED SPECIES ACT

1.1 Background

On March 4, 2001, the National Marine Fisheries Service (NMFS) received a biological assessment and request from the Medford District Bureau of Land Management (MBLM) and Rogue and Siskiyou National Forests (R-SNF) for Endangered Species Act (ESA) section 7 formal consultation on the removal of five small irrigation diversion dams in Jackson County, Oregon. The purpose of the dam removal is to eliminate fish passage barriers and restore hydrologic function to the affected streams. This biological opinion (Opinion) considers the potential effects of the proposed actions on the Southern Oregon/Northern California Coasts (SONC) coho salmon (*Oncorhynchus kisutch*). SONC coho salmon were listed as threatened under the ESA on May 6, 1997 (62 FR 24588), with critical habitat designated on May 5, 1999 (64 FR 24049). Interim protective regulations for SONC coho were issued under section 4(d) of the ESA on July 18, 1997 (62 FR 38479). This consultation is undertaken under section 7(a)(2) of the ESA, and its implementing regulations, 50 CFR Part 402.

The proposed action is to remove five irrigation diversion dams and restore natural stream configuration and hydrologic function in three SONC coho salmon streams in Southwest Oregon. The five dams are Wimer Dam and Maple Gulch Dam on Evans Creek, a major tributary of the Rogue River, Farmer's Ditch Dam and Buck and Jones Dam on Little Applegate River, a major tributary of the Applegate River, and Beaver Creek Dam on Beaver Creek, a tributary of the Applegate River. The Evans Creek dam removal projects will only deal with restoring hydrologic function at the dam sites. The Little Applegate River dam removal projects also have a water right diversion point change, which will transfer the water right exercised in the Little Applegate River to the main Applegate River, thus effectively increasing flows in the Little Applegate River by that amount. The Beaver Creek Dam is simple removal of an old diversion dam. Several other water conveyance efficiencies are built into the projects, including, but not limited to, adopting pumping and piping, sprinkler systems instead of flood irrigation, intensive farm planning to conserve water, and project monitoring.

The objective of this Opinion is to determine whether the Wimer, Maple Gulch, Farmers Ditch, Buck and Jones, or Beaver Creek dam removals are likely to jeopardize the continued existence of the SONC coho salmon, or destroy or adversely modify designated critical habitat.

1.2 Proposed Action

The proposed actions are: 1) Removal of Wimer Dam on Evans Creek; 2) removal of Maple Gulch Dam on Evans Creek; 3) removal of Farmers Ditch Dam on Little Applegate River; 4) removal of Buck and Jones Dam on Little Applegate River; and 5) removal of Beaver Creek Dam on Beaver Creek. All work would occur within the ODFW approved inwater work window of July 1 to September 15. A description of the five dam removal projects and associated

components is detailed below. All projects incorporate the following conservation measures in the proposed action:

- Minimize disturbance of existing vegetation to the greatest extent possible and replant all disturbed sites with native vegetation;
- minimize soil disturbance and displacement, and where potential exists for sediment delivery to water bodies, prevent off-site soil movement through the use of filter materials such as straw bales, waddles, or silt fencing;
- decommission temporary access roads and minimize sediment delivery to water bodies;
- always divert streamflows around activity areas using a pipe or bladder;
- use absorbent pads when fueling and operating equipment within 100 feet of streams;
- leave downed logs on site; and
- remove all concrete rubble from active stream channel.

In addition to the above, all dam removal projects comply with Northwest Forest Plan (NFP) applicable Standards and Guidelines and Aquatic Conservation Strategy objectives. All affected watersheds have completed watershed analyses, including Lower Evans Creek, Mid Evans Creek, Applegate, and Beaver/Palmer.

1.2.1 Wimer Dam Removal

The Wimer Dam removal project entails removal of the dam and associated fish ladder from Evans Creek to restore fish passage. Wimer Dam is located on Evans Creek, 1.5 miles upstream from the confluence with Pleasant Creek. The dam has a span of 150 feet, a height of 20 feet and a thickness of three feet. The dam has been in place since about 1930 and is constructed of aggregate and concrete. The dam has a fish ladder located on the north side, which provides poor passage conditions due to configuration and attractant flow conditions. The dam is a barrier to adult SONC coho movement during most flows and a substantial barrier to juvenile coho at all flows. The dam pool is approximately 1000 feet long, with a depth ranging from two to five feet at low flow, and an average width of 1200 feet. Stream and pool substrate is composed of bedrock, boulders, cobbles, gravels, sand and silt, with approximately 1500 cubic yards of material behind the dam.

Dam removal would consist of notching a portion of the dam to drain the impoundment, demolishing and removing the center part of the dam down to the original stream channel level, and excavating those bedload materials needed to establish the stream gradient. A tracked excavator would be used for demolition, and material greater than 12 inches in diameter would be removed and hauled to a quarry site located on Morrison Creek at the end of BLM Road # 34-2W-5.0. Due to the difficult access below the dam, some material may be left in place. Access to the dam site would be on an existing road and excavation work would occur from the stream channel. All heavy equipment activity would be confined to the existing road and active stream channel. Minimal vegetation disturbance should occur and be limited to existing road vegetation. All disturbance will be on previously disturbed ground.

Impounded bedload will be left in the channel to be distributed and stabilized naturally during high winter flows. The frequency of high flows during the winter and the instability of the impounded bedload, once the dam is removed, will cause the bedload to be transported down stream. Testing of the impoundment materials is planned to be completed in spring 2001 by a certified testing lab, and the results used to determine the need to remove sediments. All impounded sediment will be removed if it is found to exceed screening criteria for in-water disposal and disposed of in an appropriate upland waste disposal area.

1.2.2 Maple Gulch Dam Removal

The Maple Gulch Dam removal project entails removal of a dam from Maple Gulch to restore fish passage. Maple Gulch Dam is located on Maple Gulch Creek, 0.3 miles upstream from the confluence with Evans Creek. The dam is composed of old aggregate concrete, has a span of 35 feet, a height of 14 feet and an undetermined thickness. The dam has been in place since about 1900, and is no longer in use. The dam is a complete barrier to all SONC coho movement. The dam pool is approximately 150 feet long, and is completely filled with bedload overgrown with vegetation. Stream and pool substrate is composed of bedrock, boulders, cobbles, gravels, sand and silt, with approximately 100 cubic yards of material behind the dam.

Removal would consist of notching a portion of the dam to drain the impoundment, demolishing and removing the center part of the dam down to the original stream channel level, and excavating those impoundment materials needed to establish stream gradient. A tracked excavator would be used for demolition, with material greater than four inches in diameter removed and distributed in uplands adjacent to the site. A temporary road would be constructed to provide access to the dam site and would be approximately 150 feet long and eight feet wide. The road would be ripped, water barred, mulched and planted after use. All heavy equipment activity would be confined to the existing road and active stream channel. Minimal vegetation disturbance should occur and would be limited to existing road vegetation. All disturbance will be on previously disturbed ground.

Impounded bedload will be left in the stream channel to be distributed and stabilized naturally during high winter flows. The frequency of high flows during the winter and the instability of the impounded bedload, once the dam is removed, will cause the bedload to be transported down stream. Testing of the impoundment materials is planned to be completed in spring 2001 by a certified testing lab, and the results used to determine the need to remove materials and dispose them in an appropriate upland waste disposal area. All impounded bedload will be removed if it is found to be contaminated and disposed of in an appropriate waste disposal area.

1.2.3 Farmers Ditch Dam Removal

The Farmers Ditch Dam removal project entails removal of a dam and fish ladder from Little Applegate River to restore fish passage. Farmers Ditch Dam is located on the Little Applegate River, 1.8 miles upstream from the confluence with the Applegate River. The dam is composed of old aggregate concrete, has a span of about 100 feet, a height of five feet and an undetermined

thickness. The dam has been in place since about 1930, and is used to provide irrigation water for multiple agricultural users. The dam is a partial barrier to all adult SONC coho movement and is a complete barrier to juvenile upstream migration. The fish ladder currently provides inadequate fish passage. The dam pool is approximately 150 feet long by 100 feet wide and from two to five feet in depth. Stream and pool substrate is composed of bedrock, boulders, cobbles, gravels, sand and silt, with approximately 200 cubic yards of material behind the dam.

In addition to the dam removal, the water rights associated with the dam and the point of diversion would be moved to the Applegate River below its confluence with the Little Applegate River. A new system would be installed which would pump water from the Applegate River rather than diverting it with a dam and ditch diversion system. This will return the previously diverted water into the lower 1.8 miles of the Little Applegate River.

Dam removal would consist of notching a portion of the dam to drain the impoundment, and demolishing and removing the remainder of the dam down to the original stream channel level. A tracked excavator would be used for demolition, with material greater than a four inch diameter removed and distributed in uplands adjacent to the site. A temporary road will be constructed to provide access to the dam site and would be approximately 150 feet long and eight feet wide, which would be ripped, water barred, mulched and planted after use. All heavy equipment activity would be confined to the existing road and active stream channel. Minimal vegetation disturbance should occur and would be limited to the existing roadside vegetation. All disturbance would occur on previously disturbed ground.

Impounded bedload will be left on site to be distributed and stabilized naturally during high winter flows. The frequency of high flows during the winter and the instability of the impounded bedload, once the dam is removed, will cause the bedload to be transported down stream. Testing of the impoundment materials is planned to be completed in spring 2001 by a certified testing lab, and the results used to determine the need to remove materials. All impounded material will be removed if it is found to exceed screening criteria for in-water disposal and disposed of in an appropriate upland waste disposal area.

Installation of pumping facilities and piped conveyance, designed to replace the loss of both Farmers Ditch and Buck and Jones diversion dam facilities, will occur in the Applegate River downstream of the confluence with Little Applegate River. Six pumps will be installed at the new points of diversion along the Applegate River, and one along the lower Little Applegate River, and a system of pipes will distribute the water to the agricultural lands. Access points at four of the seven pump locations will need to be developed, entailing road development from 30 feet to 120 feet in length. Access sites are located on private lands. Heavy equipment will be used to construct pump sites, with some instream work required in the Applegate River. Instream activities would be limited to digging four pools 20 cubic yards in dimension, where the screened pump intakes will be installed. The screens would meet NMFS screening criteria (NMFS, 1996). All instream work would occur within the ODFW approved instream work window of July 1 to September 15. Relocating diversion points and changing from a gravity fed diversion system to pumping water from the Applegate and Little Applegate Rivers into a more

efficient sprinkler system will increase the overall efficiency of the involved irrigation systems and return significant volumes of water into the two rivers.

1.2.4 Buck and Jones Dam Removal

The Buck and Jones Dam removal project entails partial removal of the existing dam to restore fish passage in the Little Applegate River. Buck and Jones Dam is located on the Little Applegate River, 2.9 miles upstream from the confluence with the Applegate River. The dam is a partial barrier to SONC coho movement at low flow periods. The dam is a large flash-board dam with a concrete foundation. Since the flashboards are removed in the fall and natural flows are present over the foundation, which is flush with the stream bottom, there is no buildup of materials behind the dam. The dam will have a 1.5 foot wide by 1.5 foot deep notch placed in the dam to provide a flow monitoring station. This will also facilitate fish passage at low flow periods.

Dam notching work would consist of notching a portion of the dam as described above. A sledge hammer or jack-hammer would be used for dam notching, with material greater than four inches in diameter removed and distributed in uplands adjacent to the site. Access to the dam site would be by foot, since no heavy equipment would be needed at the site. Minimal vegetation disturbance should occur and would be limited to the existing road vegetation. All disturbance would be on previously disturbed ground.

Refer to the discussion of the Farmers Ditch Dam removal above for a description of the conversion from dam diversion to pumping systems.

1.2.5 Beaver Creek Dam Removal

The Beaver Creek Dam removal project entails removal of the existing dam to restore fish passage. Beaver Creek Dam is located on Beaver Creek, upstream from the confluence with the Applegate River. The dam is constructed of concrete and has a span of seven feet with a three foot apron, and a height of two feet. The dam is a complete migration barrier to adult SONC coho at all flows. Stream substrate is composed of bedrock, boulders, cobbles, gravels, sand and silt, with approximately 1500 cubic yards of material behind the dam.

Dam removal work would consist of demolishing the dam using a sledge hammer or jack-hammer, with material greater than four inches in diameter removed and distributed into the adjacent unuseable diversion ditch. Access to the dam site would be on foot as no heavy equipment would be needed at the site. Minimal vegetation disturbance should occur. All disturbance would be on previously disturbed ground. Impounded bedload will be left on site to distribute and stabilize naturally during high winter flows. The small size of the impounded area precludes large amounts of bedload storage, and would obviate the need for contaminant testing.

1.3 Biological Information and Critical Habitat

The Southern Oregon/Northern California Coasts (SONC) coho salmon occur in the proposed action areas. SONC coho salmon were listed as threatened under the (ESA) on May 6, 1997 (62 FR 24588), with critical habitat designated on May 5, 1999 (64 FR 24049). Interim protective regulations for SONC coho were issued under section 4(d) of the ESA on July 18, 1997 (62 FR 38479). Critical habitat is designated to include all waterways, substrate, and adjacent riparian zones below longstanding, naturally impassable barriers accessible to listed coho salmon between Cape Blanco, Oregon and Punta Gorda, California. The adjacent riparian zone is defined as the physical environment that may influence the following functions: Shade, sediment delivery to the stream, nutrient or chemical regulation, streambank stability, and the input of large woody debris/organic matter. Biological information for SONC coho salmon is found in Nehlsen et. al (1991); Nickelson et. al. (1992); and Weitkamp et. al. (1995).

1.4 Evaluating Proposed Actions

The standards for determining jeopardy are set forth in section 7(a)(2) of the ESA as defined by 50 CFR Part 402 (the consultation regulations). NMFS must determine whether the action is likely to jeopardize the listed species and/or whether the action is likely to destroy or adversely modify critical habitat. This analysis involves the initial steps of: (1) Defining the biological requirements and current status of the listed species; and (2) evaluating the relevance of the environmental baseline to the species' current status.

Subsequently, NMFS evaluates whether the action is likely to jeopardize the listed species by determining if the species can be expected to survive with an adequate potential for recovery. In making this determination, NMFS must consider the estimated level of mortality attributable to: (1) Collective effects of the proposed or continuing action; (2) the environmental baseline; and (3) any cumulative effects. This evaluation must take into account measures for survival and recovery specific to the listed salmonid's life stages that occur beyond the action area. If NMFS finds that the action is likely to jeopardize, NMFS must identify reasonable and prudent alternatives for the action.

Furthermore, NMFS evaluates whether the action, directly or indirectly, is likely to destroy or adversely modify the listed species' designated critical habitat. The NMFS must determine whether habitat modifications appreciably diminish the value of critical habitat for both survival and recovery of the listed species. The NMFS identifies those effects of the action that impair the function of any essential element of critical habitat. The NMFS then considers whether such impairment appreciably diminishes the habitat's value for the species' survival and recovery. If NMFS concludes that the action will destroy or adversely modify critical habitat it must identify any reasonable and prudent alternatives available.

For the proposed action, NMFS' jeopardy analysis considers direct or indirect mortality of fish attributable to the action. NMFS' critical habitat analysis considers the extent to which the proposed action impairs the function of essential elements necessary for juvenile and adult

migration, spawning, and rearing of the SONC coho salmon under the existing environmental baseline. NMFS' Essential Fish Habitat (EFH) analysis considers the effects of proposed actions on EFH and associated species and their life history stages, including cumulative effects and the magnitude of such effects.

1.4.1 Biological Requirements

The first step in the methods the NMFS uses for applying the ESA section 7(a)(2) to listed salmon is to define the species' biological requirements that are most relevant to each consultation. NMFS also considers the current status of the listed species, taking into account population size, trends, distribution and genetic diversity. To assess the current status of the listed species, NMFS starts with the determinations made in its decision to list SONC coho salmon for ESA protection, and also considers new data available that is relevant to the determination.

The relevant biological requirements are those for SONC coho salmon to survive and recover to naturally reproducing population levels at which time protection under the ESA would become unnecessary. Adequate population levels must safeguard the genetic diversity of the listed stock, enhance their capacity to adapt to various environmental conditions, and allow them to become self-sufficient in the natural environment. For this consultation, the biological requirements are improved habitat characteristics that function to support successful adult and juvenile migration, spawning, and rearing.

1.4.1.1 SONC coho salmon

Adult SONC coho salmon enter the Rogue River from September through January, with peak entry occurring in October. River entry and spawning may extend through January, depending on flow and the temperature regimes of the river. Spawning occurs from October through December in tributary streams. Emergent fry generally rear for a year or two in their natal streams before migrating to the ocean as smolts, including Evans Creek, Little Applegate River and Beaver Creek. Juvenile coho salmon smolt outmigration generally occurs from March through June, with peak outmigration occurring in April and May. Juvenile outmigration patterns are strongly influenced by photoperiod, stream flows, water temperature, and the lunar phase. Coho salmon smolts remain in the lower Rogue River and estuary for about a week before entry into the ocean, where they complete their ocean life-cycle. Coho salmon generally spend 18 months in the ocean before returning to their natal streams to spawn and complete the cycle.

Long-term trends suggest that natural populations of SONC coho salmon are not self-sustaining and at risk of extinction.

1.4.2 Environmental Baseline

The current range-wide status of the SONC Evolutionarily Significant Unit (ESU) may be found in Nickelson et. al. (1992); and Weitkamp et. al. (1995). The identified actions will occur within the range of the SONC coho salmon ESU. The action area is defined as all areas to be affected directly or indirectly by the Federal action and not merely the immediate area (project area) involved in the proposed action (50 CFR 404.02). The direct effects occur at the project site and may extend upstream or downstream based on the potential for impairing fish passage, hydrologic functions and processes, stream channel modification, increase in sedimentation and turbidity, displacement of migrating coho salmon, injury or killing of coho salmon, and contaminant discharge into the Rogue River or affected tributary streams. Indirect effects may occur throughout the watershed where actions described in this Opinion lead to additional activities or affect ecological functions contributing to aquatic and riparian habitat degradation. For this consultation, the action area includes Evans Creek, Beaver Creek, and Little Applegate River dam removal sites and downstream within the zone of impoundment sediment distribution, including adjacent riparian zones - defined as the area from the edge of the channel migration zone (CMZ) upslope one site potential tree (slope distance).

The projects are within the Middle Rogue River watershed of the Rogue Basin. The Rogue Basin drains 5058 square miles in Southwestern Oregon and Northern California. The Rogue River flows west from the headwaters in the Cascades near Crater Lake through interior valleys and coast range mountains of Southwest Oregon to the Pacific Ocean. The Rogue River has two main river tributaries. The Illinois River enters the Rogue at RM 27, and the Applegate River, which enters the Rogue at RM 95. The Rogue River also has a number of lesser tributaries important for sustaining anadromous fish populations, including Evans Creek, Elk Creek, Little Butte Creek, Big Butte Creek and Lobster Creek.

The Rogue system has two main dams managed by the U.S. Army Corps of Engineers, several large diversion impoundments, and hundreds of smaller water diversions affecting fish distribution. Lost Creek Dam was completed in 1977 at RM 157 on the mainstem of the Rogue. The Applegate Dam was completed in 1980 at RM 47 on the Applegate River. The dams have significantly altered the natural flow and temperature regime, and impaired fish passage and distribution in the Rogue River Basin.

Based on the best available information on the current status of SONC coho range-wide; the population status, trends, and genetics; and the poor environmental baseline conditions within the action area (as described in the BA), NMFS concludes that the biological requirements of the identified ESU within the action area are not currently being met. Numbers of SONC coho salmon are substantially below historic numbers and long-term trends are decreasing. Degraded freshwater habitat conditions have also contributed to the decline, although current habitat restoration efforts are contributing to reversing these conditions.

The NMFS Matrix of Pathways and Indicators (NMFS 1996) was used to assess the current condition of various coho salmon habitat parameters in the affected project watersheds. For

Evans Creek, the Matrix identified all habitat indicators as either at risk or not properly functioning within the action area, and in the Little Applegate River/Beaver Creek, the Matrix identified all habitat indicators except chemical contamination as either at risk or not properly functioning within the action area.

1.5 Analysis of Effects

1.5.1 Effects of Proposed Action

The effects determination in this Opinion was made using a method for evaluating current aquatic conditions, the environmental baseline, and predicting effects of actions on them. This process is described in NMFS (1996). The effects of actions are evaluated in terms of the expected effect (restore, maintain, or degrade) on aquatic habitat factors in the action area.

1.5.1.1 Dam Removal Effects

NMFS expects that there will be short-term and long-term effects associated with the five dam removal projects. Specific short-term effects associated with the action include temporary displacement of fish; release of large amounts of bedload materials (boulders, cobbles, gravels, sand and silt) as the dams are notched or removed, which will cause immediate effects on sedimentation and turbidity; dam debris input into the stream channel during dam removal; the potential release of hazardous materials, such as fuels and hydraulic fluids associated with heavy equipment, into the stream from the work area; and disturbance of riparian vegetation. Long-term effects are entirely beneficial and include increased access to spawning, rearing and migration habitat above the dam sites, increased gravel recruitment for spawning downstream of the dam sites as a result of dam removal and free bedload movement, and increased floodplain connectivity and channel migration capability that will likely produce an increase of off-channel habitat production and function.

A release of bedload behind the dams may degrade instream habitat in the short term (Spence et. al 1996) as the stream absorbs and assimilates the bedload, but this will eventually contribute to enhanced downstream habitat conditions. Any debris which may enter the stream downstream from the dam removal sites will be small in size (less than 12 inches) and likely be undetectable. The potential for short-term hazardous material release is considered negligible given the constraints applied to instream use of equipment, and is not expected to degrade instream habitats. In the long term, removal of these five dams is expected to contribute to restoration or maintenance of most Matrix habitat indicators, and to ultimately provide a beneficial effect to SONC coho populations within the affected streams. An analysis of effects for each project is described below.

1.5.1.1.1 Wimer Dam

Removal of the Wimer Dam and associated fish ladder will create short-term and long-term sediment/turbidity effects, brief instream disturbance effects during removal activities, and long-

term beneficial effects on both the riparian and aquatic habitats associated with the dam site and the SONC coho populations which use the stream. Short-term sediment and turbidity effects will be created by instream dam removal activities and disturbance and distribution of impoundment materials after dam removal. Impounded bed loads will be distributed downstream during and following the dam removal but will be most noticeable during high flows. This may cause some pools to fill with bedload materials, and may create channel morphology changes as the bedload is distributed. This will be a transitory effect, however, as the materials move through the system over time and stabilize. In addition, turbidity will increase during the breaching and when flows are reestablished within the dam and impoundment prism.

A release of hazardous materials may occur from the equipment use that could affect downstream habitats and fish. Application of the appropriate project design criteria and BMPs will minimize the potential release of these materials.

Beneficial effects of dam removal will likely result as impoundment materials are sorted and distributed by the stream following removal. New spawning and rearing habitats will be created as the system absorbs the impoundment materials and stabilizes. Dam removal is also expected to improve access for SONC coho to upstream spawning, rearing and migration habitats. Channel disturbance will occur as the natural channel is reestablished in the impoundment and at the dam site, but this will stabilize as high flows redistribute bed loads. Any dam debris which may be left in the active stream channel will quickly be assimilated by the system, since it will be less than 12 inches in diameter and of low volume. Long-term sediment effects will occur as impoundment material is distributed downstream during high flow events and as it stabilizes in the system. Since bedload distribution is anticipated during high flow events when high natural bed loads are expected, the detrimental impact of the additional materials is expected to be negligible.

1.5.1.1.2 Maple Gulch Dam

Removal of the Maple Gulch Dam will create short-term and long-term sediment/turbidity effects, brief instream disturbance effects during removal activities, and long-term beneficial effects on both the riparian and aquatic habitats associated with the dam site and the SONC coho populations which use the stream. Short-term sediment and turbidity effects will be created by instream dam removal activities and disturbance and distribution of impoundment materials after dam removal. Impounded materials will be distributed downstream during and following the dam removal, but will be most noticeable during high flows. This may cause some pools to fill with bedload materials, and may create channel morphology changes as the bedload is distributed. This will be a transitory effect, however, as the materials move through the system over time and stabilize. In addition, turbidity will increase during the breaching and when flows are reestablished within the dam and impoundment prism.

A release of hazardous materials may occur from the equipment use, which could affect downstream habitats and fish. Application of appropriate project design criteria and BMPs will minimize the potential release of these materials.

Beneficial effects of dam removal will likely result as impoundment materials are sorted and distributed by the stream following removal. New spawning and rearing habitats will be created as the system absorbs the impoundment materials and stabilizes. Dam removal is also expected to increase access for SONC coho to upstream spawning, rearing and migration habitats. Channel disturbance will occur as the natural channel is reestablished in the impoundment and at the dam site, but this will stabilize as high flows redistribute bed loads. Any dam debris which may be left in the active stream channel will quickly be assimilated by the system, since it will be less than four inches in diameter and of low volume. Long-term sediment effects will occur as impoundment bedload is distributed downstream during high flow events and as it stabilizes in the system. Since bedload distribution is anticipated during high flow events when high natural bed loads are expected, the detrimental impact of the additional materials is expected to be negligible.

1.5.1.1.3 Farmers Ditch Dam

Removal of the Farmers Ditch Dam and associated fish ladder will create short-term and long-term sediment/turbidity effects, brief instream disturbance effects during removal activities, and long-term beneficial effects on both the riparian and aquatic habitats associated with the dam site and the SONC coho populations which use the stream. Short-term sediment and turbidity effects will be created by instream dam removal activities and disturbance and distribution of impoundment materials after dam removal. Impounded materials are minimal in this case, as the impoundment is very small. Bedload materials will be distributed downstream primarily during and following the dam removal, due to gradient at this site, but may also be noticeable during high flows. This may cause some pools to briefly fill with bedload materials, and may create channel morphology changes as the bedload is distributed; however, as this is a naturally high bedload and gravel rich system, effects should be transitory. In addition, turbidity will increase during the breaching and when flows are reestablished within the dam and impoundment prism.

Release of hazardous materials may occur from the equipment use, which could affect downstream habitats and fish. Application of appropriate project design criteria and BMPs will minimize the potential release of these materials.

Beneficial effects of dam removal will likely result as impoundment materials are sorted and distributed by the stream following removal. New spawning and rearing habitats may be created as the system absorbs the impoundment materials and stabilizes. Dam removal is also expected to increase access by SONC coho to upstream spawning, rearing and migration habitats. Channel disturbance will occur as the natural channel is reestablished in the impoundment area and at the dam site, but this will stabilize as high flows redistribute bed loads and vegetation reestablishes itself. Any dam debris which may be left in the active stream channel will quickly be assimilated by the system, since it will be less than four inches in diameter and of low volume. Long-term sediment effects will occur as impoundment material is distributed downstream during high flow events and as it stabilizes in the system, although these are expected to be entirely beneficial.

In addition, the relocation of the Farmers Ditch water diversion point from this site on the Little Applegate River to seven pump sites on the Little Applegate River (two sites) and Applegate River (five sites), will restore flows equivalent to the diverted water into the lower 1.8 miles of the Little Applegate River, which will work to restore most instream habitat indicators in that reach. The removal of an equivalent amount of water from the main Applegate River will be less of an impact, since the water will be obtained from additional releases from the upstream Applegate Dam. In addition, since the water is being pumped and piped rather than diverted into an inefficient earth ditch, efficiencies will reduce the flow volume needed, further reducing instream impacts from water loss. Instream impacts from installation of pump facilities are expected to be very short term and transitory, and be primarily related to establishing a streamside pool for pump intake installation. Expected removal at each pool site is expected to be less than 20 cubic yards. Control of erosion from the disturbed sites through sloping of banks, and planting of native grasses will minimize sediment effects from the activity.

1.5.1.1.4 Buck and Jones Dam

Removal of the Buck and Jones Dam will create short-term sediment/turbidity effects, brief instream disturbance effects during removal activities, and long-term beneficial effects on both the riparian and aquatic habitats associated with the dam site and the SONC coho populations which use the stream. Short-term sediment and turbidity effects will be created by instream dam removal activities and disturbance; since this is a flash board dam, no materials exist behind the dam to be moved through the system. Turbidity may increase during the breaching and when flows are reestablished within the dam prism. Sediment and turbidity production is not expected to, in quantifiable terms, adversely affect coho salmon.

Release of hazardous materials may occur from stream side equipment use, which could affect downstream habitats and fish. Application of appropriate project design criteria and BMPs will minimize the potential release of these materials.

Beneficial effects of dam removal will likely result with the expected improvement in access by SONC coho to upstream spawning, rearing and migration habitats. Any dam debris which may be left in the active stream channel will quickly be assimilated by the system, since it will be less than four inches in diameter and of low volume.

1.5.1.1.5 Beaver Creek Dam

Removal of the Beaver Creek Dam will create short-term sediment/turbidity effects, brief instream disturbance effects during removal activities, and long-term beneficial effects on both the riparian and aquatic habitats associated with the dam site and the SONC coho populations which use the stream. Short-term sediment and turbidity effects will be created by instream dam removal activities and disturbance; since this is a very small dam, no impoundment materials exist behind the dam to be moved through the system. Turbidity may increase during the breaching and when flows are reestablished within the dam prism.

Release of hazardous materials may occur from stream side equipment use, which could affect downstream habitats and fish. Application of appropriate project design criteria and BMPs will minimize the potential release of these materials.

Beneficial effects of dam removal will likely result with the expected improvement in access by SONC coho to upstream spawning, rearing and migration habitats. Any dam debris which may be left in the active stream channel will quickly be assimilated by the system, since it will be less than four inches in diameter and of low volume.

1.5.2 Effects on Critical Habitat

NMFS designates critical habitat based on physical and biological features that are essential to the listed species. Essential features for designated critical habitat include substrate, water quality, water quantity, water temperature, food, riparian vegetation, access, water velocity, space and safe passage. Critical habitat for SONC coho salmon consists of all waterways below naturally impassable barriers including the project area. The adjacent riparian zone is also included in the designation. This zone is defined as the area that provides the following functions: Shade, sediment, nutrient/chemical regulation, streambank stability, and input of large woody debris/organic matter.

The proposed actions will affect critical habitat. The temporary impacts to critical habitat from dam removal is not expected to diminish functions in the long term. Short-term effects from sedimentation and turbidity are expected. Long-term effects at each dam removal site include stabilization of hydrologic function, improvements in bank and channel morphology stability, increased floodplain access and function, and natural flow patterns, resulting in increased functionality for SONC coho with respect to migration.

Vegetation removal is expected to be less than one acre, and will involve the removal of minimal amounts of shade components. All ground disturbed areas will be replanted with native vegetation. The NMFS does not expect that these actions will diminish the value of the habitat for survival and recovery of SONC coho salmon.

1.5.3 Cumulative Effects

Cumulative effects are defined in 50 CFR 402.02 as those effects of "future state or private activities, not involving federal activities, that are reasonably certain to occur within the action area of the federal action subject to consultation." Future federal actions, including the ongoing operation of hydropower systems, hatcheries, fisheries, and land management activities are being (or have been) reviewed through separate section 7 consultation processes. Therefore, these actions are not considered cumulative to the proposed action.

Cumulative effects are defined in 50 CFR 402.02 as "those effects of future State or private activities, not involving Federal activities, that are reasonably certain to occur within the action area of the Federal action subject to consultation." For the purposes of this analysis, the action

area is defined as Evans Creek, Little Applegate River and affected tributaries, and Beaver Creek, and includes adjacent riparian zones.

The NMFS is not aware of any specific future non-federal activities within the action area that would cause greater impacts to listed species than presently occurs. The NMFS assumes that future private and state actions will continue at similar intensities as in recent years.

1.6 Conclusion

NMFS has determined that, based on the available information, the Wimer Dam, Maple Gulch Dam, Farmers Ditch Dam, Buck and Jones Dam, and Beaver Creek Dam removals are not likely to jeopardize the continued existence of Southern Oregon/Northern California Coasts coho salmon or result in the destruction or adverse modification of critical habitat. NMFS used the best available scientific and commercial data to apply its jeopardy analysis, when analyzing the effects of the proposed action on the biological requirements of the species relative to the environmental baseline, together with cumulative effects. NMFS applied its evaluation methodology (NMFS 1996) to the proposed action and found that it would cause minor, short-term degradation of anadromous salmonid habitat due to increases in sedimentation and turbidity. These effects will dissipate over the long term through natural recovery processes, and are expected to contribute to improved fish passage over the long term. For the proposed actions, the NMFS expects that the effects will maintain or restore each of the habitat elements over the long term, likely within three to five years, based on the current condition of the sites. In the short term, increases in sedimentation and turbidity, changes to hydraulics and channel geometry, alteration of benthic habitats, displacement of coho salmon, and disruption to migration patterns is expected. Fish may be temporarily displaced by the inwater work activities and the resultant channel changes. The potential effects from the sum total of proposed actions are expected to restore and enhance the function of coho salmon habitat conditions.

1.7 Reinitiation of Consultation

Consultation must be reinitiated if: 1) The amount or extent of taking specified in the incidental take statement is exceeded, or is expected to be exceeded; 2) new information reveals effects of the action may affect listed species or critical habitats in a way not previously considered; 3) the action is modified in a way that causes an effect on listed species that was not previously considered; or, 4) a new species is listed or critical habitat is designated that may be affected by the action (50 CFR 402.16). To reinitiate consultation, the MBLM and R-SNF must contact the Habitat Conservation Division (Oregon State Branch Office) of NMFS.

2. INCIDENTAL TAKE STATEMENT

Sections 4(d) and 9 of the ESA prohibit any taking (harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, collect, or attempt to engage in any such conduct) of listed species without a specific permit or exemption. Harm is further defined to include significant habitat modification

or degradation that results in death or injury to listed species by significantly impairing behavioral patterns such as breeding, feeding, and sheltering. Harass is defined as actions that create the likelihood of injuring listed species to such an extent as to significantly alter normal behavior patterns which include, but are not limited to, breeding, feeding, and sheltering. Incidental take is take of listed animal species that results from, but is not the purpose of, the Federal agency or the applicant carrying out an otherwise lawful activity. Under the terms of section 7(b)(4) and section 7(o)(2), taking that is incidental to, and not intended as part of, the agency action is not considered prohibited taking provided that such taking is in compliance with the terms and conditions of this incidental take statement.

An incidental take statement specifies the impact of any incidental taking of endangered or threatened species. It also provides reasonable and prudent measures that are necessary to minimize impacts and sets forth terms and conditions with which the action agency must comply in order to implement the reasonable and prudent measures.

2.1 Amount or Extent of the Take

The NMFS anticipates that the action covered by this Opinion has more than a negligible likelihood of resulting in incidental take of SONC coho salmon because of detrimental effects from increases in sedimentation and turbidity, disruption to rearing conditions, and alteration of habitat (non-lethal). Effects of actions such as these are largely unquantifiable in the short term, and are not expected to be measurable as long-term effects on coho salmon habitat or population levels. Therefore, even though NMFS expects some low level of incidental take to occur due to the actions covered by this Opinion, the best scientific and commercial data available are not sufficient to enable NMFS to estimate a specific amount of incidental take to the species. In instances such as these, the NMFS designates the expected level of take as "unquantifiable." Based on the information in the biological assessment, NMFS anticipates that an unquantifiable amount of non-lethal incidental take could occur as a result of the actions covered by this Opinion. For the purposes of this Opinion, the extent of non-lethal take is limited to Evans Creek and the Applegate River and affected tributaries.

2.2 Reasonable and Prudent Measures

The NMFS believes that the following reasonable and prudent measures are necessary and appropriate to minimize take of the above species. Minimizing the amount and extent of take is essential to avoid jeopardy to the listed species.

The MBLM and R-SNF shall:

1. Minimize the amount and extent of incidental take from dam removal activities within the proposed action area by ensuring that measures are taken to limit the duration and extent of inwater work, and to time such work when the impacts to SONC coho salmon are minimized.

2. Minimize the amount and extent of incidental take from dam removal activities in or near watercourses by ensuring that effective erosion and sedimentation control measures are developed, implemented, and maintained to avoid or minimize the movement of soils and sediment both into and within watercourses and to stabilize bare soil over both the short and long term.

3. Minimize the amount and extent of incidental take from dam removal activities in or near watercourses by ensuring that an effective spill prevention, containment, and control plan is developed, implemented, and maintained to avoid or minimize point-source pollution both into and within watercourses over the short and long term.

4. Minimize the extent of impacts to aquatic, riparian, and riverine habitats, from any vegetation removal during dam removal and pump site installation, and ensure that all disturbed sites will be replanted with native vegetation as soon as practicable after work completion.

5. Carryout a monitoring and reporting program to ensure these conservation measures are effective in minimizing the likelihood of take from dam removal activities and that the proposed mitigation actions are performing adequately.

2.3 Terms and Conditions

In order to be exempt from the prohibitions of section 9 of the ESA, MBLM/R-SNF must comply with the following terms and conditions, which will implement the reasonable and prudent measures described above. These terms and conditions should be incorporated into construction contracts and subcontracts to ensure that the work is carried out in the manner prescribed. Implementation of the terms and conditions within this Opinion will further reduce the risk of impacts to fish and critical habitat. These terms and conditions are non-discretionary.

1. To implement Reasonable and Prudent Measure #1 (instream work), above, the MBLM/R-SNF shall ensure that:

    a. Where appropriate, passage is provided for both adult and juvenile forms of all salmonid species throughout the dam removal period.

    b. All work within the active channel will be completed within the NMFS/ODFW approved inwater work period, July 1 to September 15. Any adjustments to the inwater work period will first be approved by, and coordinated with, NMFS and ODFW. An extension of the inwater work window may require reinitiation of section 7 consultation.

    c. The alteration or disturbance of stream bottom, streambanks and existing riparian vegetation will be minimized. Where stream bottom or bank work is necessary, restoration of stream bottom configuration and channel morphology must occur

within that work period, and any bank protection material shall be placed to maintain a natural waterway configuration.

d. During in-water work, if listed fish may be present, including incubating eggs or juveniles, and the project involves either significant channel disturbance or use of equipment instream, ensure that the work area is well isolated from the active flowing stream.

   i. Before and intermittently during in-water work, attempts will be made to relocate fish away from the work area as is prudent to minimize risk of injury.

   ii. Any effort to relocate fish from the work area will be conducted by or under the supervision of a fishery biologist experienced in such efforts and all staff assisting the fishery biologist must have the necessary knowledge, skills, and abilities to ensure the safe handling of all ESA-listed fish.

   iii. The transfer of any ESA-listed fish from the applicant to third-parties other than NMFS personnel requires written approval from the NMFS.

   iv. The applicant must obtain any other Federal, state, and local permits and authorizations necessary for the conduct of fish relocation activities.

   v. A description of any fish relocation effort will be included in a post-project report, including the name and address of the supervisory fish biologist, methods used to isolate the work area and minimize disturbances to ESA-listed species, the means of fish relocation, the number of fish relocated by species, and any incidence of observed injury or mortality.

   vi. Any water pumped from the work isolation area will be discharged into an upland area providing over-ground flow prior to returning to the creek. Discharge will occur in such a manner as not to cause erosion.

   vii. Discharges into potential fish spawning areas or areas with submerged vegetation are prohibited.

e. Any pump or other water intake structure installed under this Opinion must have a fish screen installed, operated and maintained in accordance to NMFS' fish screen criteria.[1]

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[1] Nation Marine Fisheries Service, *Juvenile Fish Screen Criteria* (revised February 16, 1995) and *Addendum: Juvenile Fish Screen Criteria for Pump Intakes* (May 9, 1996)(guidelines and criteria for migrant fish passage facilities, and new pump intakes and existing inadequate pump intake screens) (http://www.nwr.noaa.gov/1hydrop/hydroweb/ferc.htm).

f. If a dead, injured, or sick endangered or threatened species specimen is located, initial notification must be made to the National Marine Fishery Service Law Enforcement Office, located at Vancouver Field Office, 600 Maritime, Suite 130, Vancouver, Washington 98661; phone: 360/418-4246. Care should be taken in handling sick or injured specimens to ensure effective treatment and care or the handling of dead specimens to preserve biological material in the best possible state for later analysis of cause of death. In conjunction with the care of sick or injured endangered and threatened species or preservation of biological materials from a dead animal, the finder has the responsibility to carry out instructions provided by Law Enforcement to ensure that evidence intrinsic to the specimen is not unnecessarily disturbed.

2. To implement Reasonable and Prudent Measure #2 (erosion/sediment control), above, the MBLM/R-SNF shall ensure that:

a. An erosion control plan (ECP) will be prepared by MBLM/R-SNF resource specialists and implemented by the entity conducting the dam removal work. The ECP will outline how and to what specifications various erosion control devices will be installed to meet water quality standards, and will provide a specific inspection protocol and time response. Erosion control measures shall be sufficient to ensure compliance with applicable water quality standards and this Opinion. The ECP shall be maintained on site and shall be available for review upon request. Erosion and sedimentation control measures may include (but not limited to) the following:

i. Sediment detention measures such as placement of weed-free straw, silt fences, straw bale barriers, temporary seeding, sediment traps, and construction of temporary settling basins where appropriate.

ii. Erosion control blankets or heavy duty matting (e.g., jute) may be used on steep, unstable slopes.

iii. Removal of all instream sediment or debris created by project activities, including any concrete dam portion greater than that specified in the above Opinion, with appropriate disposal away from riparian, aquatic or other sensitive habitat areas.

iv. Removal of any impoundment sediment found to contain contaminants exceeding allowable limits would be removed and stored at an acceptable site away from riparian, aquatic or other sensitive habitat areas, following storage and disposal protocols appropriate to the contaminant.

v. Bypassing stream flows around dam removal sites and stabilizing sites prior to returning flow to the channel.

b. Effective erosion control measures are in-place at all times during the dam removal activities. Dam removal activities within the floodplain or stream channel will not begin until all temporary erosion controls are in place, either downstream in dry channels or downslope of project activities within riparian areas.

c. All exposed areas are replanted with native vegetation within the season of disturbance. Efforts will be made to cover exposed areas as soon as possible after exposure.

d. All erosion control devices will be inspected throughout the construction period to ensure that they are working adequately. Work crews will be mobilized to make immediate repairs to the erosion controls, or to install erosion controls during working and off-hours. Should a control measure not function effectively, the control measure will be immediately repaired or replaced. Additional erosion controls will be installed as necessary.

e. Prior to operating within 300 feet of any stream channel, inspect and clean all construction equipment. Remove external oil, grease, dirt, and mud. Untreated wash and rinse water will not be discharged into streams and rivers without adequate treatment.

f. Where feasible, sediment-laden water created by dam removal activities will be filtered before it enters any waterbody, with special emphasis placed on those streams containing listed fish.

g. Where feasible, sediment-laden water created by pump site installation activities will be filtered before it enters any waterbody, with special emphasis placed on those streams containing listed fish.

h. Project actions meet or exceed all provisions of the Clean Water Act (40 CFR Subchapter D) and Oregon Department of Environmental Quality for the National Pollution Discharge Elimination System (NPDES) permit and the Rogue River Basin (OAR Chapter 340, Division 41).

3. To implement Reasonable and Prudent Measure #3 (point source control), above, the MBLM/R-SNF shall ensure that:

a. The dam removal entity will develop and implement a site-specific spill prevention, containment, and control clan (SPCCP), and be responsible for

containment and removal of any toxicants released. The contractor will be monitored by the MBLM/R-SNF to ensure compliance with this SPCCP.

b. Any spill will be reported to the NMFS.

i. In the event of a hazardous materials or petrochemical spill, immediate action shall be taken to prevent toxic materials from further impacting aquatic or riparian resources.

ii. In the event of a hazardous materials or petrochemical spill, a detailed description of the quantity, type, source, reason for the spill, and actions taken to recover materials will be documented.

c. Temporary access roads within 300 feet of the two-year floodplain will have containment measures in place that minimizes any potential of petrochemicals or hazardous materials from entering the two-year floodplain or stream channel.

d. Measures will be taken to prevent dam removal debris from entering and remaining within any waterbody. Dam removal materials that fall into water bodies during dam removal operations shall be removed, where feasible, in a manner that has a minimum impact on the streambed and water quality.

e. Heavy equipment use will be restricted as follows.

i. When heavy equipment is required, the applicant will use equipment having the least impact (e.g., minimally sized, rubber tired).

ii. Heavy equipment will be fueled, maintained and stored as follows.

(1) All equipment that is used for instream work will be cleaned prior to operations below the bankfull elevation. External oil and grease will be removed, along with dirt and mud. No untreated wash and rinse water will be discharged into streams and rivers without adequate treatment.

(2) Place vehicle staging, maintenance, refueling, and fuel storage areas a minimum of 150 feet horizontal distance from any stream.

(3) All vehicles operated within 150 feet of any stream or water body will be inspected daily for fluid leaks before leaving the vehicle staging area. Any leaks detected will be repaired before the vehicle resumes operation.

(4) When not in use, vehicles will be stored in the vehicle staging area.

4. To implement Reasonable and Prudent Measure #4 (revegetation), above, the MBLM/R-SNF shall ensure that:

   a. Alteration of native vegetation is minimized. Where possible, native vegetation will be removed in a manner that ensures that roots are left intact.

   b. All exposed areas within the riparian corridor will be replanted with native riparian species appropriate for the local overstory and understory plant community.

5. To implement Reasonable and Prudent Measure #5 (reporting/monitoring), above, the MBLM/R-SNF shall ensure that:

   a. Monitoring: Construction. Within 30 days of completing each dam removal, a monitoring report will be submitted to NMFS with the following information.

      i. Project identification.

         (1) Project name;

         (2) starting and ending dates for work performed; and

         (3) the project contact person.

      ii. Isolation of in-water work area. All projects involving isolation of in-water work areas must include a report of any effort to relocate ESA-listed species including:

         (1) The name and address of the supervisory fish biologist;

         (2) methods used to isolate the work area and minimize disturbances to ESA-listed species;

         (3) the number of fish moved by species;

         (4) the location and condition of all fish released; and

         (5) any incidence of observed injury or mortality.

      iii. Pollution and erosion control. A summary of all pollution and erosion efforts, including descriptions of any failures experienced with erosion control measures, efforts made to correct them and a description of any accidental spills of hazardous materials.

iv. Site restoration. Documentation of the following conditions:

(1) Finished grade slopes and elevations.

(2) Planting composition and density.

(3) A plan to inspect and, if necessary, replace failed plantings and structures for a period of five years.

v. A narrative assessment of the project's effects on natural stream function.

vi. Photographic documentation of environmental conditions at the project site before, during and after project completion.

(1) Photographs will include general project location views and close-ups showing details of the project area and project, including pre and post construction.

(2) Each photograph will be labeled with the date, time, photo point, project name, the name of the photographer, and a comment describing the photograph's subject.

(3) Relevant habitat conditions include characteristics of channels, streambanks, riparian vegetation, flows, water quality, and other visually discernable environmental conditions at the project area, and upstream and downstream of the project.

b. The report will be submitted to:

National Marine Fisheries Service
Oregon Habitat Branch, Habitat Division
Attn: OSB2000-0038
525 NE Oregon Street, Suite 500
Portland, OR 97232-2778

3. MAGNUSON-STEVENS ACT

3.1 Background

The objective of the Essential Fish Habitat (EFH) consultation is to determine whether the proposed action may adversely affect designated EFH for relevant species, and to recommend

conservation measures to avoid, minimize, or otherwise offset potential adverse effects to EFH resulting from the proposed action.

3.2 Magnuson-Stevens Fishery Conservation and Management Act

The Magnuson-Stevens Fishery Conservation and Management Act (MSA), as amended by the Sustainable Fisheries Act of 1996 (Public Law 104-267), requires the inclusion of EFH descriptions in Federal fishery management plans. In addition, the MSA requires Federal agencies to consult with NMFS on activities that may adversely affect EFH.

EFH means those waters and substrate necessary to fish for spawning, breeding, feeding, or growth to maturity (MSA §3). For the purpose of interpreting the definition of essential fish habitat: Waters include aquatic areas and their associated physical, chemical, and biological properties that are used by fish and may include aquatic areas historically used by fish where appropriate; substrate includes sediment, hard bottom, structures underlying the waters, and associated biological communities; necessary means the habitat required to support a sustainable fishery and the managed species' contribution to a healthy ecosystem; and ``spawning, breeding, feeding, or growth to maturity'' covers a species' full life cycle (50CFR600.110).

Section 305(b) of the MSA (16 U.S.C. 1855(b)) requires that:

- Federal agencies must consult with NMFS on all actions, or proposed actions, authorized, funded, or undertaken by the agency, that may adversely affect EFH;
- NMFS shall provide conservation recommendations for any Federal or State activity that may adversely affect EFH;
- Federal agencies shall within 30 days after receiving conservation recommendations from NMFS provide a detailed response in writing to NMFS regarding the conservation recommendations. The response shall include a description of measures proposed by the agency for avoiding, mitigating, or offsetting the impact of the activity on EFH. In the case of a response that is inconsistent with the conservation recommendations of NMFS, the Federal agency shall explain its reasons for not following the recommendations.

The MSA requires consultation for all actions that may adversely affect EFH, and does not distinguish between actions within EFH and actions outside EFH. Any reasonable attempt to encourage the conservation of EFH must take into account actions that occur outside EFH, such as upstream and upslope activities, that may have an adverse effect on EFH. Therefore, EFH consultation with NMFS is required by Federal agencies undertaking, permitting or funding activities that may adversely affect EFH, regardless of its location.

3.3 Identification of EFH

The Pacific Fisheries Management Council (PFMC) has designated EFH for three species of Pacific salmon: chinook (*Oncorhynchus tshawytscha*); coho (*O. kisutch*); and Puget Sound pink salmon (*O. gorbuscha*)(PFMC 1999). Freshwater EFH for Pacific salmon includes all those

streams, lakes, ponds, wetlands, and other water bodies currently, or historically accessible to salmon in Washington, Oregon, Idaho, and California, except areas upstream of certain impassable man-made barriers (as identified by the PFMC), and longstanding, naturally-impassable barriers (i.e., natural waterfalls in existence for several hundred years). Detailed descriptions and identifications of EFH for salmon are found in Appendix A to Amendment 14 to the Pacific Coast Salmon Plan (PFMC 1999). Assessment of potential adverse effects to these species' EFH from the proposed action is based on this information.

3.4 Effects of Proposed Action

The proposed actions are described above in section 1.2 of the Opinion. The action area is within the Evans Creek and upper Applegate and Little Applegate Rivers. These streams have been designated as EFH for various life stages of coho and chinook salmon. The Wimer Dam, Maple Gulch Dam, Farmers Ditch Dam, Buck and Jones Dam and Beaver Creek Dam removal projects may result in short- and long-term adverse effects to a variety of habitat parameters. Short-term impacts include: Increases in sedimentation and turbidity, instream disturbance during removal activities, potential contaminant introduction through use of heavy equipment in and near streams, and alteration of instream habitats. Long-term (greater than one year) effects include: Adjustments in benthic habitats and macroinvertebrate populations, channel geometry, and flow dynamics in Evans Creek and the Little Applegate River.

3.5 Conclusion

Information submitted by the federal entities in the BA is sufficient for NMFS to conclude that the proposed actions may adversely affect EFH for Pacific salmon.

3.6 EFH Conservation Recommendations

Pursuant to section 305(b)(4)(A) of the Magnuson-Stevens Act, NMFS is required to provide EFH conservation recommendations for any Federal or state agency action that would adversely affect EFH. The project design features that the MBLM/R-SNF included as part of the proposed actions and all of the reasonable and prudent measures and the terms and conditions outlined above in the Opinion are applicable to designated EFH. Therefore, NMFS incorporates each of those measures as EFH conservation recommendations.

3.7 Statutory Response Requirement

Please note that the Magnuson-Stevens Act (section 305(b)) and 50 CFR 600.920(j) requires the Federal agency to provide a written response to NMFS' EFH conservation recommendations within 30 days of its receipt of this letter. This response must include a description of measures proposed by the agency to avoid, minimize, mitigate or offset the adverse impacts of the activity on EFH. If the response is inconsistent with a conservation recommendation from NMFS, the agency must explain its reasons for not following the recommendation.

3.8 Consultation Renewal

The MBLM/R-SNF must reinitiate EFH consultation with NMFS if any of the proposed actions are substantially revised in a manner that may adversely affect EFH, or if new information becomes available that affects the basis for NMFS' EFH conservation recommendations, if any (50 CFR Part 600.920).

4. LITERATURE CITED

Nehlsen, W., J. E. Williams, and J. A. Lichatowich. 1991. Pacific salmon at the crossroads; stocks at risk from California, Oregon, Idaho, and Washington. Fisheries 16:4-21.

Nickelson, T. E., J. W. Nicholas, A. M. McGie, R. B. Lindsay, D. L. Bottom, R. J Kaiser, and S.E. Jacobs. 1992. Status of anadromous salmonids in Oregon coastal basins. Unpublished manuscript. Oregon Department of Fish and Wildlife, Research and Development Section. Corvallis, Oregon. 1992.

National Marine Fisheries Service. Juvenile Fish Screen Criteria (revised February 16, 1995) and Addendum: Juvenile Fish Screen Criteria for Pump Intakes (May 9, 1996) (guidelines and criteria for migrant fish passage facilities, and new pump intakes and existing inadequate pump intake screens)(http://www.nwr.noaa.gov/1hydrop/hydroweb/ferc.htm).

NMFS (National Marine Fisheries Service). 1996. Making Endangered Species Act determinations of effect for individual and grouped actions at the watershed scale. Habitat Conservation Program, Portland, Oregon. September 4, 1996.

PFMC (Pacific Fishery Management Council). 1999. Amendment 14 to the Pacific Coast Salmon Plan. Appendix A: Description and Identification of Essential Fish Habitat, Adverse Impacts and Recommended Conservation Measures for Salmon. Portland, Oregon.

Spence, B.C., G.A. Lomnicky, R.M. Hughes, R.P. Novitzki. 1996. An ecosystem approach to salmonid conservation. Management Technology Report.

Weitcamp, L.A., T. C. Wainwright, G. J. Bryant, G. B. Milner, D. J. Teel, R. G. Kope, and R. S. Waples. 1995. Status review of coho salmon from Washington, Oregon, and California. U.S. Department of Commerce, NOAA Tech Memo. NMFS-NWFSC-24, Northwest Fisheries Science Center, Seattle, Washington. 258 p.